

JCL Series



- 2:1 Input Range
- High Efficiency up to 90%
- -40 °C to +100 °C Operating Temperature
- Fixed 300 kHz Switching Frequency
- Regulated Single Outputs
- Continuous Short Circuit Protection
- Six-sided Metal Case or Open Frame

Specification

Input

- | | |
|----------------------|--|
| Input Voltage Range | • 24 VDC (18-36 VDC)
48 VDC (36-75 VDC) |
| Input Current | • See table |
| Input Filter | • Pi network |
| Undervoltage Lockout | • Turn on >71% nominal input,
Turn off <67% nominal input |

Output

- | | |
|--------------------------|--|
| Output Voltage | • See table |
| Output Voltage Adj | • ±10% |
| Minimum Load | • No minimum load required |
| Line Regulation | • ±0.5% max |
| Load Regulation | • ±0.5% max from 10% to full load |
| Setpoint Accuracy | • ±1.0% max |
| Ripple & Noise | • 1.8 V, 2.5 V, 3.3 V & 5.0 V models
75 mV pk-pk max (20 MHz bandwidth)
12.0 V & 15.0 V models
100 mV pk-pk max (20 MHz bandwidth) |
| Transient Response | • 5% max deviation, recovery to within
1% in 300 µs for a 25% load change |
| Temperature Coefficient | • 0.02%/°C |
| Overvoltage Protection | • 1.8 V & 2.5 V models 3.3 V typical,
3.3 V models 3.9 V typical,
5.0 V models 6.2 V typical,
12.0 V models 15.0 V typical,
15.0 V models 18.0 V typical |
| Overcurrent Protection | • 110-150% |
| Short Circuit Protection | • Trip & restart (hiccup mode) |
| Remote On/Off | • ON >3.5 VDC or open circuit
OFF <1.8 VDC
Optional negative logic, add suffix '-N'
to model number |
| Thermal Protection | • Shuts down when case measures
+110 °C typical |

General

- | | |
|---------------------|--|
| Efficiency | • See table |
| Isolation Voltage | • 1500 VDC Input to Output
1500 VDC Input to Case
-V Output is connected to case |
| Switching Frequency | • 300 kHz typical |
| MTBF | • >750 kHrs to MIL-STD-217F |

Environmental

- | | |
|-----------------------|---|
| Operating Temperature | • -40 °C to +100 °C (see derating curve) |
| Case Temperature | • +100 °C max |
| Storage Temperature | • -55 °C to +125 °C |
| Cooling | • Convection-cooled |
| Operating Humidity | • Up to 90%, non-condensing |
| Shock | • 30 g, half sine wave 18 ms pulse applied
3 times on each of 6 axes |
| Vibration | • 5-500 Hz, 3 g, for 10 mins on each
of 3 axes |

EMC

- | | |
|--------------------|--|
| Emissions | • EN55022, Level A conducted & radiated
with external components - contact
technical sales |
| ESD Immunity | • EN61000-4-2, Level 2 Perf Criteria A |
| Radiated Immunity | • EN61000-4-3, 3 V/m Perf Criteria A |
| Conducted Immunity | • EN61000-4-6, 3 V rms Perf Criteria A |

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Efficiency	Model Number ^(2, 3)
			No Load	Full Load		
18-36 VDC	1.8 VDC	8.0 A	60 mA	714 mA	84%	JCL2524S1V8
	2.5 VDC	8.0 A	55 mA	749 mA	88%	JCL2524S2V5
	3.3 VDC	6.0 A	55 mA	729 mA	89%	JCL2524S3V3
	5.0 VDC	5.0 A	60 mA	1157 mA	90%	JCL2524S05
	12.0 VDC	2.0 A	30 mA	1149 mA	89%	JCL2524S12
	15.0 VDC	1.6 A	30 mA	1149 mA	89%	JCL2524S15
36-75 VDC	1.8 VDC	8.0 A	30 mA	397 mA	84%	JCL2548S1V8
	2.5 VDC	8.0 A	30 mA	473 mA	88%	JCL2548S2V5
	3.3 VDC	6.0 A	40 mA	463 mA	89%	JCL2548S3V3
	5.0 VDC	5.0 A	40 mA	579 mA	80%	JCL2548S05
	12.0 VDC	2.0 A	20 mA	568 mA	88%	JCL2548S12
	15.0 VDC	1.6 A	20 mA	568 mA	88%	JCL2548S15

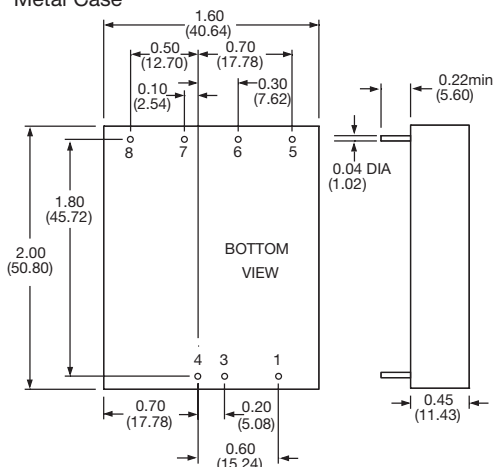
Notes

1. Input currents specified at nominal 24 V or 48 V input.
2. For optional open frame version, add suffix '-U' to model number.
3. For optional negative logic Remote On/Off, add suffix '-N' to model number.

Mechanical Details

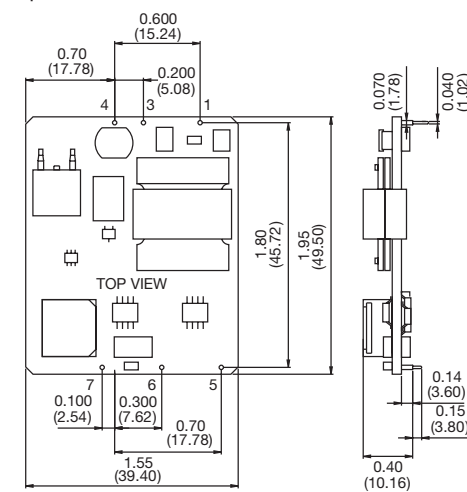
All dimensions are in inches (mm)
 Weight: 25 g (0.06 lbs)

Metal Case



Pin	Function
1	On/Off Control
3	- V Input
4	+V Input
5	Trim
6	-V Output & Case
7	+V Output
8	No Pin

Open Frame

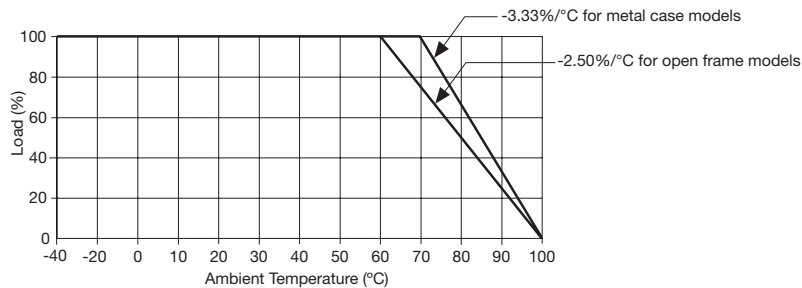


Pin	Function
1	On/Off Control
3	- V Input
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6	-V Output
7	+V Output
8	No Pin

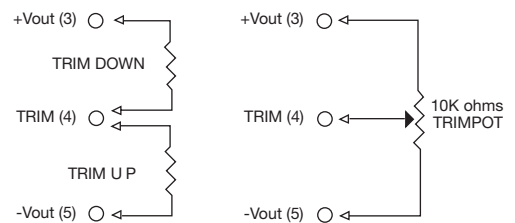
Application Notes

Derating Curve

Derating:
 Metal case models above +70 °C, linearly to zero power at 100 °C.
 Open frame models above +60 °C, linearly to zero power at 100 °C.



External Output Trim



Remote On/Off Control

Standard ROF logic is positive.
 Output On >3.5 VDC or open circuit
 Output Off <1.8 VDC

Optional ROF logic is negative ('-N' version).
 Output On <1.8 VDC
 Output Off >3.5 VDC or open circuit